## Amendments to the Specification

**Please amend the specification as follows.**

**Please amend the paragraph beginning at page 2, line 21, as follows:**

Fig. 11 is a section view of a conventional recordable two-layer optical disc. Shown in Fig. 11 are transparent substrates 1101 and 1102 made of polycarbonate resin, for example; a first recording film 1103; semitransparent reflective film 1104 for passing or reflecting light incident from substrate 1101; second recording film 1105; reflective film 1106 for reflecting a laser beam incident from substrate 1101; and adhesive 1107 with the ability to pass light <u>and</u> used to bond substrate 1101 and substrate 1102.

**Please amend the paragraph beginning at page 4, line 3, as follows:**

Fluctuation in light reflections from other layers varies greatly depending on how much of the laser spot incident to the other layer hits a data area and how much hits an address area. As shown in Fig. 10, a smooth mirror surface free of grooves and pits occupies a greater percentage of the address area 94 than the data area 95, thus reducing light diffraction and increasing reflection. This means that ~~if~~ when reproducing data from the second layer, for example, an address area occupies a large percentage of the laser spot incident to the first layer, an unwanted dc component will be superimposed on the amplitude of the signal from the second layer, and fluctuation is thus produced in the playback signal. This is shown in Fig. 12.

**Please amend the paragraph beginning at page 4, line 17, as follows:**

Fig. 12 shows recording marks 121 recorded to the second layer, light spots 122, 123, and 124 for reproducing the second layer, and light spots 125, 126, and 127 incident to the first layer when reproducing signals recorded to the second layer. Light spots 122 and 125, 123 and 126, and 124 and 127 are temporally coincident, and are corresponding pairs of light spots emitted to the first and second layers. The diameter of the laser beam incident to each layer is approximately 1 μm on the second layer and approximately 60 μm on the first ~~layer~~ <u>layer,</u> if the wavelength of the laser is 650 nm, the NA of the objective lens is 0.6, and the distance between layers is 40 μm.

**Please amend the paragraph beginning at page 5, line 17, as follows:**

Imposing such an unwanted dc component on the playback signal produces a local fluctuation in the envelope. When this fluctuation is ~~great~~ great, such as shown in areas 1210 and 1211, the playback signal cannot be correctly digitized. Conversely, if the operating frequency of the digitizing circuit generating the digital signal is increased in order to track sudden changes in the envelope, the digitizer will also track signals that should not be tracked because of defects and similar problems. Playback performance drops as a result.

**Please amend the paragraph beginning at page 6, line 11, as follows:**

A multilayer optical disc according to the present invention has plural data recording layers of which at least one is optically recordable, and to achieve the above ~~object~~ object, the diffraction efficiency of a light beam incident to the optically recordable data recording layer is within a specific range in the data recording layer when reading data from a data recording layer other than the optically recordable layer.

**Please amend the paragraph beginning at page 10, line 7, as follows:**

Figs.~~Fig.~~ 24 (a) to (f) are used to describe a recording method according to the present invention;

**Please amend the paragraph beginning at page 10, line 15, as follows:**

Figs.~~Fig.~~ 27 (a) to (c) describe recording an optical disc by a recording apparatus of the related art; and

**Please amend the paragraph beginning at pages 10-11, line 25, as follows:**

Fig. 1 is a ~~section~~ sectional view of a two-layer optical disc according to a first embodiment of the present invention. As shown in Fig. 1, this two-layer optical disc has transparent substrates 101 and 102 typically made of polycarbonate resin, a first recording film 103, semitransparent reflective film 104 for passing or reflecting a laser beam incident from substrate 101; second recording film 105; reflective film 106 for

reflecting a laser beam incident from substrate 101; and adhesive 107 with the ability to pass light and used to bond substrate 101 and substrate 102.

**Please amend the paragraph beginning at pages 13-14, line 16, as follows:**

Fig. 4 shows recording marks 41 recorded to the second recording layer, light spots 42, 43, 44 for reproducing data from the second recording layer, and light spots 45, 46, 47 incident to the first recording layer when reproducing signals recorded to the second recording layer. Light spots 42 and 45, 43 and 46, and 44 and 47 are temporally coincident pairs of light spots emitted to the first and second layers. The diameter of the laser beam incident to each layer is approximately 1 μm on the second layer and approximately 60 μm on the first ~~layer~~ layer, if the wavelength of the laser is 650 nm, the NA of the objective lens is 0.6, and the distance between layers is 40 μm.

**Please amend the paragraph beginning at page 16, line 16, as follows:**

This embodiment of the invention has been described using a signal recorded to the second recording layer, but it will be obvious that local fluctuations in the playback signal can be reduced when reproducing signals recorded to the first recording layer by similarly providing dummy grooves near the address blocks in the address areas of the second recording layer. In this ~~case~~ case, a small light spot will be focused on the surface of the first recording film, and the larger light spot will be incident to the surface of the second recording layer.

**Please amend the paragraph beginning at page 17, line 18, as follows:**

Dummy grooves in the present embodiment are disposed so as to be offset in the radial direction half the track width from the track center, but can be disposed at any other location where local fluctuations in the playback signal can be reduced.

**Please amend the paragraph beginning at page 18, line 7, as follows:**

Randomly locating the address areas as shown in Fig. 16 is the preferred method of dispersely locating the address areas. If the address areas are located at a specific storage capacity increment in the data area, however, the address areas can be arranged in

a spiral pattern as shown in Fig. 17 by offsetting the address areas a substantially constant disc center angle q (angle to the disc center). In this ~~case~~ case, the address areas are not aligned in the radial direction over a period of several ten tracks. In other words, the arrangement of the address areas in the tangential direction does not match the arrangement in the radial direction.

**Please amend the paragraph beginning at pages 19-20, line 22, as follows:**

~~Fig. 20 and Fig. 21~~Figs. 20(a) and 20(b) and Figs. 21(a) and 21(b) show a light spot 1901 incident to the first layer when reproducing data from the second layer. Fig. 20 (a) corresponds to an optical disc as shown in Fig. 18. Fig. 20 (a) shows that the sloped address area group 1902 in one zone is completely contained within light spot 1901, and Fig. 20 (b) shows that perpendicular address area group 1903 having no slope (that is, a group of address areas aligned in the radial direction) is also completely contained within the light spot 1901. Fig. 21 (a) corresponds to the optical disc shown in Fig. 17. In this case sloped address area group 1905 diagonally traverses the light spot 1901, and perpendicular address area group 1906 likewise perpendicularly traverses the light spot 1901.

**Please amend the paragraph beginning at pages 22-23, line 13, as follows:**

~~An~~A sloped address area group 1905 and perpendicular address area group 1906 that completely traverse the light spot are compared next with reference to Fig. 21 (a) and Fig. 21 (b). The apparent width We as measured in line with the slope is narrower than the width W of the sloped address area group 1905. Because the apparent width We of the sloped address area group 1905 is narrower than the width W of the perpendicular address area group 1906, fluctuation Fs with sloped address area group 1905 is less than fluctuation Fv with perpendicular address area group 1906. It is therefore also possible in the cases shown in Fig. 21 (a) and Fig. 21 (b) to achieve better playback performance by disposing the address areas extending in the radial direction at an angle to the direction of light spot travel than by placing the address areas perpendicular to the direction of light spot travel.

**Please amend the paragraph beginning at page 23, line 13, as follows:**

It will be obvious to one with ordinary skill in the related art that the above also applies to the arrangement of address areas in the second layer when reproducing the first layer, and better playback performance can be achieved by placing the address areas oriented in the radial direction at an angle to the direction of light spot travel when compared with address areas disposed ~~perpendicularly~~ perpendicular to the direction of light spot travel.

**Please amend the paragraph beginning at page 24, line 1, as follows:**

It will be noted that the address areas can be disposed across multiple tracks ~~perpendicularly~~ perpendicular to the direction of light spot travel if the width of the multiple tracks is ignorably small, such as approximately 10% or less, relative to the spot diameter.

**Please amend the paragraph beginning at pages 24-25, line 16, as follows:**

A multilayer optical disc according to another embodiment of the present invention is described next below with reference to the accompanying figures. Fig. 5 is a section view of a multilayer optical disc according to this second embodiment of the invention. As shown in Fig. 5, this two-layer optical disc has transparent substrates 501 and 502 typically made of polycarbonate resin, a first recording film 503, semitransparent reflective film 504 for passing or reflecting a laser beam incident from substrate 501; second recording film 505; reflective film 506 for reflecting a laser beam incident from substrate 501; and adhesive 507 with the ability to pass light and used to bond substrate 501 and substrate 502.

**Please amend the paragraph beginning at page 25, line 4, as follows:**

Fig. 6 shows the sector structure of the two-layer optical disc shown in Fig. 5. As shown in Fig. 6, this two-layer optical disc 61 has a trench-like groove track 63 and a land track 62 disposed between adjacent groove tracks ~~23~~ 63. Data areas 65 are provided in the groove tracks, and address areas 64 are provided in the land tracks.

**Please amend the paragraph beginning at page 25, line 10, as follows:**

When one revolution of each track is divided into plural sectors, an address area 64 and data area 65 is provided for each sector. In this ~~case~~ case, each address area 64 is also referred to as a "sector address area" [address area, sic].

**Please amend the paragraph beginning at pages 25-26, line 15, as follows:**

Fig. 7 shows the address area 64 of the two-layer optical disc 61 in detail. An address area indicating the address of a particular sector of groove track ~~a~~63a, 63b, 63c is provided in the adjacent land track 62a, 62b, 62c. To record the sector address of groove track 63a, for example, three address blocks 72, 73, ~~74~~ 74, each containing plural pit ~~sequences~~ sequences, are provided in the address area of land track 62a. To indicate the sector address of groove track 63b, three address blocks 75, 76, ~~77~~ 77, each containing plural pit ~~sequences~~ sequences, are similarly provided in the address area of land track 62b. Note also the dummy grooves 711, 712, 713, 714, 715, 716.

**Please amend the paragraph beginning at page 26, line 2, as follows:**

Fig. 8 shows recording marks 81 recorded to the second recording layer, light spots 82, 83, 84 for reproducing data from the second recording layer, and light spots 85, 86, 87 incident to the first recording layer when reproducing signals recorded to the second recording layer. Light spots 82 and 85, 83 and 86, and 84 and 87 are temporally coincident pairs of light spots emitted to the first and second layers. The diameter of the laser beam incident to each layer is approximately 1 µm on the second layer and approximately 60 µm on the first ~~layer~~ layer, if the wavelength of the laser is 650 nm, the NA of the objective lens is 0.6, and the distance between layers is 40 µm.

**Please amend the paragraph beginning at page 29, line 10, as follows:**

It will also be noted that the address areas are disposed so as to be aligned in the radial direction of the disc in this embodiment of the invention. It is also possible, however, to alleviate variations in reflectivity between where address pits are present and where address pits are not present, and thereby buffer local fluctuations in the playback signal, by providing dummy grooves even when the address areas are irregularly aligned.

**Please amend the paragraph beginning at pages 32-33, line 21, as follows:**

Another method tests address detection. That is, if the address assigned to a particular sector cannot be detected, or if the address data is redundantly recorded three or four times and two or more address blocks cannot be detected, or if some other address detection standard cannot be cleared, then the corresponding sector is determined to be lacking in reliability. Recording to that sector, or to the entire block containing that sector, is then prohibited and the data is recorded to a reserved disc area.

**Please amend the paragraph beginning at page 34, line 3, as follows:**

The first recording layer 2202 and second recording layer 2204 are a phase-change material. The first recording layer 2202 has optical characteristics as shown in Fig. 28. When unrecorded, the recording layer is in a crystalline phase as indicated on the left side of Fig. 28. When exposed to a laser beam, the crystalline phase turns amorphous as shown on the right side in Fig. 28, forming a pit. In the unrecorded crystalline phase, 20% of incident light is reflected, 40% is absorbed, and 40% is passed to the next layer. When recorded and amorphous as shown in the right, 10% of incident light is reflected, 30% is absorbed, and 60% is passed.

**Please amend the paragraph beginning at pages 36-37, line 23, as follows:**

In this optical data recording ~~method~~ method, the data recording layers are segmented in the radial direction into plural zones, and the above-noted specific areas are areas bordering an adjacent zone.

**Please amend the paragraph beginning at pages 37-38, line 15, as follows:**

First recording layer 2202 and second recording layer 2204 have plural spiral or concentric tracks. Each track has multiple sectors. Note that in this embodiment of the ~~invention~~ invention, first recording layer 2202 is recorded first and second recording layer 2204 is recorded after the first recording layer 2202 is completely recorded. Recording to second recording layer 2204 can commence after first confirming that all of first recording layer 2202 has been recorded. If the data area 2210, 2214 is divided into

zones as shown in Fig. ~~23~~22, it is alternatively possible to confirm that recording a specific zone of the first recording layer 2202 is completed, and then record to the corresponding zone at the same radial position in the second recording layer 2204.

**Please amend the paragraph beginning at page 38, line 4, as follows:**

The address is also assumed in this embodiment to be redundantly recorded with pits and lands by writing the address data four times for each sector. Thus redundantly recording the address data increases the address read rate particularly during playback. It will be obvious that redundantly writing the address data shall not be limited to recording each address four times. Recording the address data shall also not be limited to each sector. Address data can also be recorded using wobble data or ~~other~~ another method not dependent on pits and lands.

**Please amend the paragraph beginning at page 41, line 9, as follows:**

~~Fig. 24 shows~~Figs. 24(a)-24(f) show whether something is recorded to various blocks in the data area 2210, spare area 2209, and defect list area 2208. Shaded blocks in ~~Fig. 24~~Figs. 24(a)-24(f) contain some type of recorded data, and white spaces indicate unrecorded blocks. Operation of the above-described optical disc drive during recording is described next with reference to ~~Fig. 24~~Figs. 24(a)-24(f).

**Please amend the paragraph beginning at page 43, line 12, as follows:**

When recording to the defect list area 2208 ends, optical head 203 returns to the data area 2210 and records dummy data to the defective block B03 as shown in Fig. 24 (f). Note that the read-address process is also used to record the dummy ~~data~~ data, but a more lenient standard can be used for the address detection test than when recording real data. For example, a passing standard could be successfully reading one of four redundant addresses in the write sector, passing the address detection test in the immediately preceding sector, or other standard insofar as it also assures that dummy data will not be mistakenly written to a different sector. A monotone signal starting with a VFO signal, for example, is recorded as the dummy data.

**Please amend the paragraph beginning at page 44, line 7, as follows:**

The defective sector processing algorithm in the above embodiment is also described by way of example only. Other algorithms, such as recording dummy data and then recording the defective block address data to the defect list area 2208, can be used insofar as dummy data is recorded to any sector that did not pass the address detection test. The location of the spare area 2209 shall also not be limited to the inside circumference area of the disc as in this embodiment.

**Please amend the paragraph beginning at pages 45-46, line 25, as follows:**

When the data area 2210 is segmented into plural zones as shown in ~~Fig. 25~~ Fig. 25, the disc speed is different with ZCLV recording and the number of sectors per track is different in each zone. If several tracks at the zone boundary are unrecorded, dummy data can be recorded during disc formatting or the first time user data is recorded. This avoids situations such as shown in Fig. 27 (b), and keeps the power of the laser beam incident to the second recording layer located at the same radial position constant when recording to the second recording layer. Fig. 27 (a) shows the first recording layer completely recorded, Fig. 27 (b) shows the first recording layer partially recorded, and Fig. 27 (c) shows the first recording layer completely blank (unrecorded). The power of the laser beam reaching the second recording layer in each of the cases shown in Figs. 27 (a), (b), and (c) is indicated by the waveform below each figure. The dotted line waveforms show the waveform from Fig. 27 (a) for comparison.